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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,248

07/26/2006

Matthias Maase

13156-00067-US1

8379

30678

7590

03/29/2010

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EXAMINER

HAVLIN, ROBERT H

ART UNIT

PAPER NUMBER

1626

MAIL DATE

DELIVERY MODE

03/29/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,248	<b>Applicant(s)</b> MAASE ET AL.	
	<b>Examiner</b> ROBERT HAVLIN	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-8, 10, 11 and 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

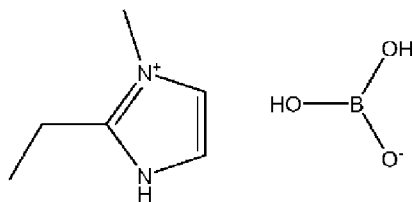
**Status of the claims:** Claims 1-20 are currently pending.

**Priority:** This application is a 371 of PCT/EP05/00752 (01/26/2005) and claims foreign priority to GERMANY 10 2004 003 958.5 (01/26/2004).

### *Election/Restrictions*

1. Applicant previously elected Group I (claims 9-12). Applicant also elected the species (ethylmethylimidazolium dihydrogenborate) as follows:

Applicants herewith elect ethylmethylimidazolium dihydrogenborate, i.e., the compound having the structure:



,which is obtained according to example 6 of the barium method set forth on page 21, lines 32-40, of Applicants' disclosure. Specifically,  $[Q^+]$  is ethylmethylimidazolium cation,  $n = 0$ ,  $OR'' = OH$ , and  $m = 3$ . Applicants note that the negative charge in  $[BR^n(OR'')_m]^-$  indicates that one OH from among the  $OR''$  is deprotonated.

As is detailed below, the generic claim was not found patentable, therefore the provisional election of species is in effect and the claims are restricted to the elected species only and the remaining subject matter held withdrawn. Claims 10 and 11 not reading on the elected species are hereby withdrawn.

### **RESPONSE TO APPLICANT REMARKS**

#### ***Claim Rejections - 35 USC § 102***

2. Claims 9 and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by Xu, Wu and Angell, Austen, "Novel Orthoborate Ionic Liquids," Dept. of Chem., Arizona

State University, Presented at 202nd Meeting of the Electrochemical Society, October 20-25, 2002, Salt Lake City, Utah ("Wu").

Applicant amended claim 9 to narrow the scope of the [Q]<sup>+</sup> cation such that it no longer reads on the Wu prior art compound. Accordingly, this rejection is **withdrawn**.

***Claim Rejections - 35 USC § 112***

3. Claims 9 and 12 were rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for the entire scope of the claimed ionic liquids both with respect to the anions and cations. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Applicant has substantially narrowed the scope of the [Q]<sup>+</sup> cation, however, the scope of the anion continues to read on R' and R'' groups that are so structurally diverse from the guidance provided in the specification that one of skill in the art would not recognize that the anion-cation combination would continue to form an ionic liquid. Furthermore, as described in Wasserscheid and Keim (Angew. Chem. Int. Ed., 2000, 39, 3772-3789 (German version cited in the IDS)), there are a number of synthetic difficulties encountered in the creating novel ionic liquids such as the presence of impurities and means of combining the two ions. In addition, the prior art references do not disclose ionic liquids that vary as widely in structure as do the instant claims. Therefore, one of skill in the art would not have a reasonable expectation that the compounds claimed could be synthesized and combined in a manner to form ionic liquids without undue experimentation. This conclusion is particularly true in light of the

fact that the instant specification only discloses the elected species as a working example.

For the above reasons, this rejection is **maintained**.

#### **NEW CLAIM REJECTIONS NECESSITATED BY AMENDMENT**

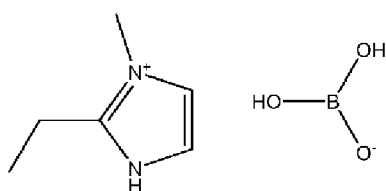
##### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 9 and 12 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 1/26/09. In that paper, applicant elected the following species:

Applicants herewith elect ethylmethylimidazolium dihydrogenborate, i.e., the compound having the structure:



, which is obtained according to example 6 of the barium method set forth on page 21, lines 32-40, of Applicants' disclosure. Specifically,  $[Q^+]$  is ethylmethylimidazolium cation,  $n = 0$ ,  $OR'' = OH$ , and  $m = 3$ . Applicants note that the negative charge in  $[BR^n(OR'')_m]^-$  indicates that one OH from among the  $OR''$  is deprotonated.

This election indicates that the invention is different from what is defined in the claim(s) because in the present claims, as amended,  $n$  cannot be 0 while  $m$  is 3. In addition,

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giving the claims their broadest reasonable interpretation, the claims do not read on the elected species.

### ***Conclusion***

The claims are not in condition for allowance. **THIS ACTION IS MADE FINAL.**

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HAVLIN whose telephone number is (571)272-9066. The examiner can normally be reached on Mon. - Fri., 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Joe McKane can be reached at (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Havlin/  
Examiner, Art Unit 1626

/Rebecca L Anderson/  
Primary Examiner, Art Unit 1626